

WE CLAIM:

CLAIMS

1. A recessed fastener adapter device for recessing a fastener on a printed wire board (PWB), the device comprising:

5 a board interface for interfacing the adapter device with a PWB at a fastener hole; and,

a fastener head engaging surface for accepting and recessing a fastener head.

10 2. The device of claim 1 wherein the board interface includes a tube with an exterior surface, wherein a flange extends radially outward from the exterior surface, and wherein the flange has an upper surface for interfacing with a PWB.

15 3. The device of claim 2 wherein the fastener head engaging surface includes the tube having a closed end with a bore for engaging a fastener head and passing a fastener shaft attached to a fastener head.

20 4. The device of claim 1 wherein the board interface includes a tube with an exterior surface, wherein a flange extends radially outward from the exterior surface, and wherein the flange has a lower surface for interfacing with a PWB.

25 5. The device of claim 4 wherein the fastener head engaging surface includes the tube having a closed end with a bore for engaging a fastener head and passing a fastener shaft attached to a fastener head.

6. The device of claim 1 wherein the board interface includes a tube with an exterior surface for interfacing with a PWB; and, wherein the fastener head engaging surface includes the tube having a closed end with a stepped bore for engaging a fastener head and passing a fastener shaft attached to a fastener head.

7. The device of claim 6 wherein the tube exterior surface has a protrusion for interfacing with a PWB.

8. The device of claim 7 wherein a step in the tube exterior surface forms the protrusion.

9. The device of claim 6 wherein the tube exterior surface is grooved.

10. A system for recessing a fastener on a printed wire board (PWB), the system comprising:

a PWB having a fastener hole, a top surface, and a bottom surface; and,

a recessed fastener adapter including:

a board interface for interfacing the recessed fastener adapter with the PWB at the fastener hole; and,

a fastener head engaging surface for accepting and recessing a fastener head.

11. The system of claim 10 wherein the board interface
interfaces with the PWB at the fastener hole; and,

wherein the fastener head engaging surface engages a fastener
head and recesses a fastener head at least partially below the PWB top
5 surface.

12. The system of claim 11 wherein the board interface
includes a tube with an exterior surface, wherein a flange extends radially
outward from the exterior surface, wherein the flange has an upper surface
10 for interfacing with the PWB, and wherein the flange upper surface
interfaces with the PWB bottom surface at the PWB fastening hole.

13. The device of claim 12 wherein the fastener head
engaging surface includes the tube having a closed end with a bore for
15 engaging a fastener head and passing a fastener shaft attached to a fastener
head.

14. The device of claim 11 wherein the board interface
includes a tube with an exterior surface, wherein a flange extends radially
20 outward from the exterior surface, and wherein the flange has a lower
surface for interfacing with the PWB.

15. The device of claim 14 wherein the fastener head
engaging surface includes the tube having a closed end with a bore for
25 engaging a fastener head and passing a fastener shaft attached to a fastener
head.

16. The device of claim 15 wherein the closed end of the tube passes through the PWB fastener hole, and wherein the flange lower surface interfaces with the PWB top surface.

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17. The device of claim 11 wherein the board interface includes a tube with an exterior surface for interfacing with the PWB; and, wherein the fastener head engaging surface includes the tube having a closed end with a stepped bore for engaging a fastener head and passing a fastener shaft attached to a fastener head.

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18. The system of claim 17 wherein the tube is inserted into the PWB fastener hole and wherein the tube exterior surface interfaces with sides of the PWB hole.

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19. The system of claim 18 wherein the tube exterior surface has a protrusion for interfacing with the PWB, and wherein the protrusion interfaces with the PWB bottom surface.

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20. The system of claim 19 wherein a step in the tube exterior surface forms the protrusion.

21. The system of claim 11 wherein the board interface has an exterior surface for interfacing the recessed fastener adapter with the PWB at the fastener hole, and wherein at least part of the exterior surface is in compression where interfacing with the PWB.

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22. The system of claim 11 wherein the board interface has an exterior surface for interfacing the recessed fastener adapter with the PWB at the fastener hole, wherein the exterior surface accepts an adhesive material for interfacing with the PWB, and wherein the exterior surface is attached to the PWB with an adhesive material.

23. The system of claim 11 wherein the board interface has an exterior surface for interfacing the recessed fastener adapter with the PWB at the fastener hole, wherein the exterior surface is a material conducive to solder bonding, and wherein the exterior surface is bonded to the PWB with solder.

24. The system of claim 11 wherein the board interface has an exterior surface for interfacing the recessed fastener adapter with the PWB at the fastener hole, and wherein at least part of the exterior surface is grooved.